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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,023

12/31/2003

Ho Lee

AB-1350 US

9344

32605

7590

10/16/2006

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EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,023	LEE, HO	
	Examiner	Art Unit	
	Jeffrie R. Lund	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/24/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-6, and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Leusink et al, US Patent 6,302,057 B1.

Leusink et al teaches a CVD apparatus that includes: a processing chamber 10 with an inner space 15; a gas feed member 65 for supplying a gas into the chamber; a metal diffuser 20 partitioning the inner space of the chamber into a first and second partitions having a plurality of holes 21 and includes an "L" shaped extension 54 overlapping a surface 52 of the ceramic insulating frame 120, the ceramic insulating frame 120 disposed in between the chamber side wall and the diffuser or extends to the side wall of the chamber, and located above the surface of the "L" shaped extension and facing the surface of the substrate; and an RF source 24 connected to the diffuser 20 and the pedestal is grounded. (Entire document, specifically Figure 1) The specific substrate processed is an intended use of the apparatus and the apparatus of Leusink et al can inherently process any desired substrate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leusink et al, US Patent 6,302,057, in view of Zhao et al, US Patent 5,558,717.

Leusink et al was discussed above.

Leusink et al differs from the present invention in that Leusink et al does not teach that the diffuser 20 is stainless steel or aluminum, and a baffle plate.

Zhao et al teaches an aluminum diffuser plate 122 and a baffle plate (blocker plate) 124 (Figure 1).

The motivation for making the diffuser of Leusink et al out of aluminum as taught by Zhao et al is to provide a specific metal as required by Leusink et al but only generically described. The motivation for adding a baffle plate to the showerhead of Leusink et al is to more uniformly distribute the gas supplied to the diffuser of Leusink et al as taught by Zhao et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the diffuser of Leusink et al out of aluminum and add a diffuser as taught by Zhao et al.

Response to Arguments

5. Applicant's arguments filed December 8, 2005 have been fully considered but they are not persuasive.

As the Examiner was preparing the case for allowance, the previously cited art was reviewed. The Examiner reviewed Leusink et al and determined that the previous

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definition of "side wall" was too narrowly applied, and if given the broadest reasonable interpretation of the claim language, the term "side wall" includes the top of the chamber (i.e. the top is a side and a wall of the chamber, thus the top is a side wall). Therefore, contrary to Applicant's argument that "that the Leusink reference cited by the Examiner fails to teach or suggest the claimed device. In particular, the Leusink reference fails to teach or suggest that the insulating frame is extends to the side wall of the chamber," Leusink et al extends to a "side wall" of the chamber.

Additionally, the claim language, specifically, the phrase "said insulating frame being disposed on an upper side of the extension of the diffuser and extending to the side wall of the chamber" does not require that the insulating frame contact the "side wall" of the chamber, only that it extends "to" (i.e. in a direction toward) the "side wall". Leusink et al teaches that the insulating frame 22 has an inner diameter and an outer diameter radially outward of the inner diameter. Thus, the insulating of Leusink et al "extends to the side wall of the chamber".

Allowable Subject Matter

6. The claims 1-12 would be allowable if claims 1 and 11 were amended to read:

1. (currently amended) A chemical vapor deposition apparatus comprising:

a chamber having an inner space and top, bottom, and side wall;

a susceptor disposed in the chamber and supporting a substrate;

a diffuser partitioning the inner space of the chamber into first and second partitions and having an extension extended out from a boundary, wherein the extension of the diffuser is exposed to the inner space of the chamber; and

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an insulating frame disposed between the side wall of the chamber and the diffuser, said insulating frame being disposed on an upper side of the extension of the diffuser and extending to and contacting the side wall of the chamber.

11. (currently amended) A chemical vapor deposition apparatus comprising:

a chamber having an inner space and top, bottom, and side wall;

a susceptor disposed in the chamber and supporting a substrate;

a diffuser partitioning the inner space of the chamber into first and second partitions and having an extension of an "L" shape extended out from a boundary, wherein the extension of the diffuser is exposed to the inner space of the chamber; and

an insulating frame disposed between the side wall of the chamber and the diffuser, said insulating frame being disposed on an upper side of the extension of the diffuser and extending to and contacting the side wall of the chamber.

7. These amendments are clearly supported in figure 1 which shows that the chamber has a top (lid 20) and a chamber 10 having a bottom and side wall, and that the insulating frame contacts the sidewall of the chamber 10.

8. If the claims are amended as indicated above, the amendment will be entered, the search will be updated, and if no further art is found, then the case will be allowed. If art is found, the Examiner will contact the Applicant and try to resolve any problems or issue a Non-Final Office Action.

9. If the claims are amended in a different manner with a different scope, the amendment will not be entered, as it will require further search and consideration.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

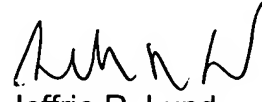
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-

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273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
10/12/06